CLAIMS

What is claimed is:

1. A disk drive apparatus, comprising:

a disk-like medium for storing data;

a head reads data from and writes data to the disk-like medium;

an actuator which moves the head to a designated location on the disk-like medium; and

a position control unit which positions the head by controlling a drive of the actuator; the position control unit comprising:

a first integrator which generates a first gain; and

a second integrator which generates a second gain that is larger than the first gain.

2. The disk drive apparatus according to Claim 1, wherein the first integrator and the second integrator are connected in parallel.

3. The disk drive apparatus according to Claim 1, wherein:

the head performs a seek operation for moving to a designated location on the disk-like medium and a follow operation for reading or writing data staying at the location;

the first integrator operates during the seek operation, and

the second integrator operates during the follow operation.

4. The disk drive apparatus according to Claim 3, wherein:

a switching unit is provided between the first integrator and the second integrator;

the first integrator operates when the switching unit closes during the seek operation; and

the second integrator or both first integrator and second integrator operate when the switching unit opens during the follow operation.

5. A disk drive apparatus, comprising:

a disk-like medium for storing data;

a head which performs a seek operation for moving to a designated location on the disk-like medium and a follow operation for reading or writing data staying at the designated location;

an actuator which moves the head to the designated location on the disk-like medium; and

a position control unit which positions the head by controlling an operation of the actuator; wherein the position control unit comprises:

an integrator which generates a corresponding first gain during the seek operation and a second gain different from the first gain during the follow operation.

6. The disk drive apparatus according to Claim 5, wherein the second gain is larger than the first gain.

7. The disk drive apparatus according to Claim 5, wherein the integrator comprises a first integrator which generates the first gain and a second integrator which generates the second gain.

8. The disk drive apparatus according to Claim 5, wherein the integrator switches from the first gain to the second gain when a change from the seek operation to the follow operation takes place.

9. A method of head position control, comprising:

controlling the position of a data read/write head on a storage medium based on servo information, wherein the position of the head is controlled based on a first

gain when the head is moving over the storage medium, and

the position of the head is controlled based on a second gain larger than the first gain when the head stays at a designated location on the storage medium.

10. The head position control method according to Claim 9, further comprising the step of setting the first gain to such a value that will ensure the stability of operation while the head moves over the storage medium until it stops at the designated location.

11. The head position control method according to Claim 9, further comprising the step of setting the second gain to such a value that will ensure servo tracking against disturbances in the frequency range not higher than 300 Hz while the head stays at the designated location.

12. A hard disk drive, comprising:

a magnetic disk on which servo information is stored;

a magnetic head which seeks the magnetic disk and reads or writes data staying at a designated location;

an actuator which moves the magnetic head to the designated location on the magnetic disk; and

a head position control unit which controls the position of the magnetic head based on the servo information read out by the magnetic head and which comprises an integrator; wherein

the integrator generates a first gain and a second gain larger than the first gain, the first gain being generated when the magnetic head does not read or write data and the second gain being generated when the magnetic head reads or writes data.

13. The hard disk drive according to Claim 12, wherein the first gain is generated when the magnetic head is seeking.

14. The hard disk drive according to Claim 12, wherein the integrator is composed of a first integrator which generates the first gain and a second integrator which generates the second gain.

15. The hard disk drive according to Claim 12, wherein the integrator generates the first gain and second gain, switching between them.